



Submit by Monday 1 December 2014

DARWIN INITIATIVE APPLICATION FOR GRANT FOR ROUND 21: STAGE 2

Please read the Guidance Notes before completing this form. Where no word limits are given, the size of the box is a guide to the amount of information required.

Information to be extracted to the database is highlighted blue.

ELIGIBILITY**1. Name and address of organisation** (NB: Notification of results will be by email to the Project Leader in Question 7)

Applicant Organisation Name:	University of Edinburgh
Address:	Institute of Geography, Drummond Street
City and Postcode:	Edinburgh EH89XP
Country:	UK
Email:	
Phone:	

2. Stage 1 reference and Project title

Ref 2846	Conserving pine woodland biodiversity in Belize through community fire management
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3. Project dates, and budget summary

Start date: 1 April 2015		End date: 31 March 2018		Duration: 36 months
Darwin request	2015/16 £117,525	2016/17 £97,334	2017/18 £84,139	Total request £298,998
Total project cost £ 484,343				
Confirmed matched funding as % of total Project cost: 38%				
100% of required matched funding is confirmed.				
Are you applying for DFID or Defra funding? (Note you cannot apply for both)			DFID	

4. Define the outcome of the project. This should be a repetition of Question 24, Outcome Statement.

Biodiversity of pine woodlands in southern Belize is conserved by developing community-based wildfire management, with local communities incentivised to participate through a more just and sustainable use of woodland resources.

5. Country(ies)

Which eligible host country(ies) will your project be working in. You may copy and paste this table if you need to provide details of more than four countries.

Country 1: Belize	Country 2:
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6. Biodiversity Conventions

Which of the conventions supported by the Darwin Initiative will your project be supporting? Note: projects supporting more than one convention will not achieve a higher scoring

Convention On Biological Diversity (CBD)	Yes
Nagoya Protocol on Access and Benefit Sharing (ABS)	Yes
International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA)	No
Convention on International Trade in Endangered Species (CITES)	No

6b. Biodiversity Conventions 200

Please detail how your project will contribute to the objectives of the convention(s) your project is targeting. You may wish to refer to Articles or Programmes of Work here.

This project addresses several Aichi targets prioritised for 'step-up action' at the CBD-COP-12 meeting this October in Pyeongchang. The community fire management we will develop responds to the need for actions whereby 'degraded ecosystems may be enhanced through in situ conservation and restoration, contributing to climate change mitigation (targets 14-16). The community forest enterprise component will provide 'economically sound, positive incentives for promoting conservation and sustainable use of biodiversity' (target 3), whilst the community fire management will enable local communities to participate in conservation (target 18). Enabling communities to negotiate access to woodland resources and obtain licenses for sustainable extraction are the types of 'short term measures' suggested in Annex 1 to UNEP/CBD/COP/12/6 through which 'NGOs and communities may negotiate mutually agreed terms for benefit sharing'.

The project supports Belize's signatory commitments to various UN-CBD articles, including (6) national strategies for biodiversity monitoring and conservation; (7) identification & monitoring of components requiring urgent conservation; (8) restoring degraded ecosystems by balancing sustainable use/conservation; (10) informing national biodiversity strategy; (11) providing economically and socially sound incentives to conserve biodiversity and promote sustainable use; (12) establishing research/training programmes; (13) promoting public education and awareness and (15) enabling access to resources and benefit sharing.

Is any liaison proposed with the CBD/ABS focal point in the host country?

Government of Belize Forest Department (FD) is the National Focal Point for the CBD in Belize. FD has been actively involved as a partner since the inception of the project and played a major role in scoping the project as Section 10 and the letter of support describes more fully. The project outputs will also enable FD to implement elements of the National Wildland Fire Management Policy and Strategy. Although Belize is not presently a signatory to the Nagoya Protocol on Access & Benefit Sharing (ABS), FD sees this Darwin project as a means to evaluate the feasibility and implications of granting greater access and benefit sharing to communities in its forest reserves and national parks. The project is therefore anticipated to provide evidence to FD that will assist Belize to move toward ratifying the Nagoya Protocol.

7. Principals in project. Please identify and provide a one page CV for each of these named individuals. You may copy and paste this table if you need to provide details of more personnel or more than one project partner.

Details	Project Leader	Project Partner 1 (in country lead)	Partner 2	Partner 3
Surname	Stuart	Muschamp	Macqueen	Kay
Forename (s)	Neil	Mario	Duncan	Elma
Post held	Lecturer	Terrestrial protected area manager	Forest Team Leader	Lecturer
Organisation (if different to above)		Toledo Institute for Development and Environment (TIDE)	International Institute for Environment & Development (IIED)	University of Belize Environmental Research Institute (ERI)
Department	Geography			Botany
Telephone				
Email				

8. Has your organisation been awarded a Darwin Initiative award before? If so, please provide details of the most recent awards (up to 6 examples).

Reference No	Project Leader	Title
17022	Stuart	Conservation of lowland savannas of Belize.
EIDPR049	Stuart	Strengthening local capacity for savanna conservation and management in Belize
14048	Dawson	Galapagos Coral Conservation Mapping and Monitoring
8154	Newton	Biodiversity conservation and sustainable use in Mexican cloud forest
4027	Newton	Biodiversity Assessment and Conservation Techniques

10. Please list all the partners involved (including the Lead Institution) and explain their roles and responsibilities in the project. Describe the extent of their involvement at all stages, including project development. This section should illustrate the capacity of partners to be involved in the project. Please provide written evidence of partnerships. Please copy/delete boxes for more or fewer partnerships.

<p>Lead institution and website:</p> <p>University of Edinburgh (UoE)</p>	<p>Details (including roles and responsibilities and capacity to engage with the project): (max 200 words)</p> <p>Edinburgh University has led the scientific conceptualisation of the project. Through its School of Geosciences and the Royal Botanic Gardens Edinburgh, the University has a track record of world class biodiversity research in Belize for over 40 years, with particular expertise on biodiversity monitoring of the pine savanna woodlands required for this project. Through Edinburgh's international research in ecosystem services for poverty alleviation, it has close links with organisations such as IIED that will deliver the livelihood development component of this project. The University will be responsible for overall project delivery, including project coordination, financial management, M&E, and publication of results.</p> <p>Dr Neil Stuart successfully led Darwin project 17022, which established a national inventory of the plant diversity of Belize's savannas and trained the first generation of staff for Belize's new Environmental Research Institute that was established during that project. With particular expertise in vegetation surveys and satellite remote sensing, Dr Stuart has worked extensively in Belize since 1991, leading two major science expeditions in 1996 and 2005.</p> <p>A Project Officer (50% time) will also be based at UoE, whose duties will include undertaking livelihood surveys, assisting IIED with developing community business plans, supporting TIDE to produce training materials and assisting with project M&E.</p>
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<p>Partner Name and website where available:</p> <p>Toledo Institute for Development & Environment</p> <p>www.tidebelize.org</p>	<p>Details (including roles and responsibilities and capacity to engage with the project): (max 200 words)</p> <p>TIDE (est. 1997) is a Belizean NGO that co-manages Payne's Creek National Park (PCNP) and the Port Honduras Marine Reserve with the Belize Forest and Fisheries Departments. TIDE also works beyond the borders of these protected areas to build stakeholder capacity in environmental stewardship.</p> <p>TIDE jointly developed the project with UoE. TIDE will coordinate project activities in Belize, and lead work packages 1 and 2.</p> <p>TIDE has a strong track record in PA management and project implementation. TIDE founded and leads the Southern Belize Fire Working Group, a partnership between NGO co-managers, Forest Department and private logging concessionaires to pool resources to manage wildfire at the ecosystem level. In partnership with Everglades National Park, TIDE has built Belizean capacity in fire management, enabling previously dormant fire management plans to be activated in multiple PAs.</p> <p>The communities buffering PCNP have good relations with TIDE. In 2014, TIDE trained 45 farmers from these communities in best practices for agricultural fires in a pilot project that informs this proposal. TIDE also has experience in establishing rights-based resource extraction from PAs.</p> <p>Mario Muschamp (50% time) will manage WPs 1&2 supported by a terrestrial ecologist (40%) and a ranger (25% time).</p>
<p>Have you included a Letter of Support from this institution?</p>	<p>Yes</p>

<p>Partner Name and website where available:</p> <p>International Institute for Environment and Development (IIED)</p>	<p>Details (including roles and responsibilities and capacity to engage with the project): (max 200 words)</p> <p>IIED has been involved in 3 scoping meetings for this project and contributed to writing the stage-1 and stage-2 applications, specifically work package 3 for the local community business development.</p> <p>Duncan Macqueen will lead work package 3. As leader of IIED's Forest Team, he has over 30 years of relevant experience in developing community forest enterprises, negotiating access to forest resources for local communities and helping them to secure sustaining incomes that can materially improve their livelihoods and improve their security.</p> <p>He will run two training workshops in Belize to foster ideas from the local communities for small forest enterprises (SFEs), advising TIDE how to develop and screen these enterprises, and how to negotiate terms of access to woodlands with logging concessionaires and with the Belize Forest Department to ensure equitable benefit sharing. Duncan will be supported by the UK project Officer, who for example will undertake the community livelihood surveys under his direction and assist him with drafting the community business development plans.</p>
Have you included a Letter of Support from this institution?	Yes

<p>Partner Name and website where available:</p> <p>University of Belize Environmental Research Institute (ERI)</p>	<p>Details (including roles and responsibilities and capacity to engage with the project): (max 200 words)</p> <p>ERI helped to develop this proposal and previously collaborated with UoE on Darwin project 17022, as well as contributing to the Belize large mammal project 17012.</p> <p>ERI is set to become Belize's primary hub for environmental data and information sharing. ERI is coordinating the National Biodiversity Monitoring Network to ensure the various government agencies and NGOs that co-manage Belize's PA network conduct coordinated and strategic biodiversity monitoring, and enable Belize to meet its reporting requirements under the CBD.</p> <p>ERI is also Belize's centre of excellence in PA management training, spearheading the implementation of the National Training Program on Protected Areas Management (NTPPAM). In this DI project, ERI will lead the development and provision of teaching courses in savanna biodiversity monitoring and resource inventorying (activities 1.7 and 1.8), and incorporate a fire management training course to be developed by TIDE and Everglades National Park (activity 2.2) into the NTPPAM.</p> <p>Together with TIDE, ERI will develop protocols and standards for monitoring several of the priority indicators for the National Biodiversity Monitoring Program (<i>Amazona oratrix</i>, bird indicator species, and timber species).</p>
Have you included a Letter of Support from this institution?	Yes

<p>Partner Name and website where available:</p> <p>Government of Belize Forest Department (FD)</p> <p>www.forestdepartment.gov.bz</p>	<p>Details (including roles and responsibilities and capacity to engage with the project): (max 200 words)</p> <p>The Forest Department (FD) is the National Focal Point for the CBD in Belize, and the government agency responsible for implementing the National Wildland Fire Management Policy and Strategy. FD will use the outputs of this Darwin project to inform revision of the National Biodiversity Strategy and Action Plan, which is likely to recommend FD provides greater access by local communities to protected areas. The project outputs will also enable FD to implement elements of the National Wildland Fire Management Policy and Strategy.</p> <p>FD has considerable previous experience of Darwin Projects as co-implementing partner of projects 1722 and 2445. FD has been involved in all stages of this project's conceptualisation, hosting two scoping workshops on 26/6/2014 and 12/11/2014 to develop the proposal and align it with other ongoing projects, such as a new GEF6 project revising Belize's National Biodiversity Strategy, in which FD is a lead partner.</p> <p>Although Belize is not presently a signatory to the Nagoya Protocol, FD sees this Darwin project as a means to evaluate the feasibility and implications of granting greater access and benefit sharing to communities bordering national parks. The project is anticipated to provide evidence to FD that will assist Belize to move toward ratifying the Nagoya Protocol.</p>
Have you included a Letter of Support from this institution?	Yes

11. Have you provided CVs for the senior team including the Project Leader	Yes
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12. Problem the project is trying to address 200 words

Please describe the problem your project is trying to address. For example, what biodiversity and challenges will the project address? Why are they relevant, for whom? How did you identify these problems?

Belize's lowland pine savannas are characterised by WWF as a critical and endangered eco-region and a regional priority for biodiversity conservation because this small (2,500 km²) ecosystem contains a singular mix of North and South American species, including endangered/critically endangered species of parrot, tapir, tree and cycad palm. Darwin project 1722 discovered almost half of all Belize's endemic plants occur only in this ecosystem.

These pine savannas are being degraded to grasslands without pine by intense wildfires which are occurring more frequently due to increasing anthropogenic burning caused by agricultural expansion in bordering areas and fires deliberately set by local hunters. These fire risks are exacerbated by climatic change, leading the government to identify wildfire control as a priority adaptation for local communities and to assess wildfire as the single greatest threat to Belize's terrestrial protected areas.

This project is proposed by TIDE and FD, who together manage over 90% of the pine savanna woodlands of Toledo District. Belize's Poverty Elimination Strategy recognises that communities living in these pine woodlands are among the poorest in Belize and wildfire poses a serious risk to their security and livelihood, but Belize's FD currently lacks capacity to implement its national wildfire management strategy.

13. Methodology 500 words

Describe the methods and approach you will use to achieve your intended outcomes and impact. Provide information on how you will undertake the work (materials and methods) and how you will manage the work (roles and responsibilities, project management tools etc.).

Work Packages 2 & 3 from stage-1 are now consolidated into WP 2 and activities made more specific.

WP 1 Establish biodiversity and resource baselines and build national capacity for biodiversity / resource monitoring (lead: TIDE, with UoE, ERI, FD)

- 1.1 Undertake reconnaissance surveys of pine stocks in PCNP to identify where sustainable extraction may be commercially viable;
- 1.2 Establish 28 permanent 0.2 ha plots in PCNP to monitor biodiversity, biomass and seedling regeneration rates;
- 1.3 Assess the distribution, abundance and productivity of palmetto palm in PCNP, Deep River Forest Reserve and Swasey Bladen Forest Reserve;
- 1.4 Develop protocols for monitoring Caribbean pine (*Pinus caribaea*) and palmetto palm (*Acoelorrhaphe wrightii*);
- 1.5 Establish/refine protocols for monitoring key conservation targets (*Amazona oratrix*, *Zamia prasina*, *Vitex gaumeri*) and biodiversity indicator species (birds) in line with the National Biodiversity Monitoring Program;
- 1.6 Establish biodiversity and wildfire baselines against which effects of fire control and sustainable harvesting will be monitored;
- 1.7 Develop materials for monitoring pine woodland biodiversity and woodland resources for the National Training Program in PA Management (NTPPAM);
- 1.8 Conduct national training workshops in biodiversity monitoring through the NTPPAM for ~30 PA staff.

WP 2: Build Capacity to implement fire management and sustainable forest use (TIDE, with FD, UoE, IIED)

- 2.1 Conduct meetings in 5 communities to a) assess baseline knowledge and attitudes regarding wildfire; b) raise awareness of fire risks, laws and best practices; c) consult communities how they wish to participate in fire management;
- 2.2 Produce materials to train community members in fire management according to needs identified in 2.1 and disseminate nationally through NTPPAM;
- 2.3 Train ≥50 farmers and community leaders from 5 communities in fire management according to identified needs;
- 2.4 Train ≥15 PA personnel and community leaders to deliver further training (2.3) beyond EoP;
- 2.5 Train and equip ≥50 community members to harvest palmetto seed sustainably, and manage wildfire;
- 2.6 Assess the economic costs of fire management and incomes from sustainable extraction of woodland resources;
- 2.7 Create a plan for a sustainable extraction zone in PCNP, including evaluation of the ecological and socio-economic costs and benefits;
- 2.8 Convene meetings between TIDE, FD, Agriculture Department, and National and District Associations of Village Councils to agree improvements to governance of rural fire use.

WP 3 Facilitate business development to generate revenue sufficient for poverty alleviation and long term viability of ecosystem management (IIED, with FD, TIDE)

- 3.1 Undertake baseline and EoP monitoring surveys of livelihoods in 5 buffer communities;
- 3.2 Formalise license agreement(s) with FD for community-run small forest enterprises (SFEs) to sustainably use woodland resources;
- 3.3 Formalise license agreements with FD whereby community members are granted concessions to harvest NTFPs within forest reserves;
- 3.4 Establish and monitor NTFP concessions involving ~50 community members. Establish a concessionaires committee.
- 3.5 Convene meetings with 5-10 community groups to assess interest in developing SFEs;
- 3.6 Develop business plans for 3 SFEs, including market analysis and costs of pilot production
- 3.7 Provide training to ~20 staff so TIDE/other NGOs can develop further SFEs beyond EoP.
- 3.8 Promote TIDE fire management consultancies.

14. Change Expected 250 words

Detail what the expected changes this work will deliver. You should identify what will change and who will benefit.

- If you are applying for Defra funding this should specifically focus on the changes expected for biodiversity conservation and its sustainable use.
- If you are applying for DFID funding you should in addition refer to how the project will contribute to reducing poverty. Q19 provides more space for elaboration on this.

The project will conserve and enhance biodiversity and livelihoods in Toledo's pine woodlands by reducing the frequency of intense wildfires. Many wildfires presently result from poor communities striving to meet basic needs (60% of Toledo's rural population have insufficient income to meet basic food requirements). By PAs shifting to allow sustainable use of pine woodlands and allowing communities to access the benefits, a key change is that ≥50 community members will have a vested interest in managing fire in order to maintain and improve woodland resources. Granting long-term exclusive rights to harvest NTFPs within defined concession areas to ≥50 community members will foster stewardship and reduce public / political pressure to convert this endangered ecosystem into agricultural uses. Further small forest enterprises will be in the pipeline.

≥50 NTFP concessionaires will be participating in fire management and ≥50 farmers will be applying best practices in agricultural fire use. As a result, the frequency and severity of wildfires will be reduced, enabling natural capital to grow, biodiversity to recover and livelihoods to be more secure.

Community participation in fire management will offset costs previously borne by TIDE, making PCNP more financially viable.

Capacity in biodiversity/resource monitoring, fire management, and business development will have been increased nationally and the capacity to provide such training will be available from NTPPAM.

Project results will inform a possible amendment to the National Parks System Act to facilitate sustainable extraction zones within national parks.

Please see Q19 for more on poverty reduction.

15a. Is this a new initiative or a development of existing work (funded through any source)? Please give details (Max 200 words):

This is a new initiative that builds upon previous work by each partner. In project 1722 UoE made a national biodiversity assessment that identified the pine woodlands of southern Belize as a hotspot of plant endemism; whilst that botanical information will assist plant biodiversity monitoring, this project has a clearly different focus and objectives.

In 2004/05, management planning for PCNP identified wildfire as the greatest threat to biodiversity. Since then, TIDE has increased its fire management capacity from zero to become probably the leading institution in Belize. PCNP pine savanna is regenerating due to a decade of diligent fire management, funded by Belize's Protected Areas Conservation Trust and private foundations.

This project goes above and beyond regular programmed PA management. It seeks to lift PCNP out of a "just maintaining" mode to a long-term sustainable solution whereby local communities are active stewards of the park, and indeed all Toledo's pine savanna. The SBFWG is trained, equipped, and poised to bring communities on board. TIDE pioneered rights-based resource extraction from marine PAs and will now apply this experience to terrestrial PAs.

The project will develop the nascent NTPPAM, National Biodiversity Monitoring Program, and Yellow Headed Parrot Working Group.

15b. Are you aware of any other individuals/organisations/projects carrying out or applying for funding for similar work? Yes No

If yes, please give details explaining similarities and differences, and explaining how your work will be additional to this work and what attempts have been/will be made to co-operate with and learn lessons from such work for mutual benefits.

Ya'axché Conservation Trust, TIDE's neighbouring NGO in Toledo and a member of the Southern Belize Fire Working Group, is currently preparing a proposal to GIZ for a project that seeks to address anthropogenic wildfire.

TIDE and Ya'axché have exchanged proposals to ensure the proposed activities in each are complimentary and do not duplicate one another. Ya'axché's proposed activities are:

- 1) Procure equipment to support the development of community fire brigades;
- 2) Train local community members to form community fire brigades that implement preventative and curative fire management and raise awareness of the destructive effects of fire;
- 3) Develop specific locally appropriate level 1 and level 2 fire management training for the National Ranger Training Academy;
- 4) Institutional strengthening and community membership building for the Southern Belize Fire Working Group.

Activity 3) differs from the training proposed here since theirs is geared toward PA rangers rather than community members. Activity 2) is similar to our activity 2.3 and would occur in a partially overlapping geographical area. In the event that both proposals are funded, the second organization to receive approval would reallocate funds to additional planned but unfunded SBFWG activities, such as collaborating with communities to establish designated "no burn areas" around vulnerable sites (hills, watercourses, settlements, etc.) and training community "fire wardens" to predict fire risk from prevailing conditions and inform their community. Other activities in the two proposals would be additive or synergistic.

15c. Are you applying for funding relating to the proposed project from other sources? Yes No

If yes, please give brief details including when you expect to hear the result. Please ensure you include the figures requested in the spreadsheet as Unconfirmed funding.

TIDE has applied for £72,999 from the Japan Social Development Fund for a project to establish three female-run fruit-drying businesses, including one in a community buffering Payne's Creek National Park. A decision is expected in the first quarter of 2015. TIDE intends to include funds for a public awareness campaign on wildfire (~£9,000) as part of an up-coming proposal to the Protected Areas Conservation Trust, for which the result would be known by June 2015. TIDE also plans to apply to Massachusetts Audubon Society for £6,000 to conduct a national population assessment of yellow-headed parrot. Those projects would compliment and enhance, but are not necessary for, the achievement of this project's outcome.

Finally, as a result of marketing its fire management expertise for consultancies, TIDE anticipates receiving contracts worth at least £5,000 from FD and other NGO co-managers within the project timeframe.

16. Value for money 250 words

Please describe why you consider your application to be good value for money including justification of why the measures you will adopt will secure value for money?

The total cost of this project is £484k, of which 38% (£185k) is contributed in matched funds that are already secured. Taking into account a further £93k that we conservatively estimate will be obtained in grants during the project for additional work that will add value to the project, the Darwin funds will have delivered excellent value for money, approximately being matched Pound for Pound by EoP. Project finances will be carefully monitored by UoE, who have an excellent track record of delivering more than expected volume and quality of outputs from their previous Darwin project budgets.

The capacity created to manage pine woodlands, effect fire control and develop community forest enterprises will all deliver continuing cost-savings to the partners and stakeholders after the project. For example, knowing sustainable levels of pine extraction will enable FD to operate more efficiently, while the community fire management operations set up during the project will enable TIDE to offset some of their costs of fire management, and redirect to other PA activities. Once the first generation of community forest businesses are created, TIDE will be able to use this experience beyond the project to develop further businesses without the cost of external consultants.

The project will also produce a range of training materials and biodiversity / forest resource monitoring protocols that will continue to be used as part of the National Training Program on PA Management (NTPPAM) and National Biodiversity Monitoring Program. The partners will obtain value from these outputs over much longer than the 3-year project duration.

17. Ethics 300 words

Outline your approach to meeting the Darwin Initiative's key principles for research ethics as outlined in the guidance notes.

The project has been designed with strong leadership and participation from Belizean organisations. Our main partners TIDE, FD and ERI have been fully involved in all stages of project formulation through multiple scoping meetings and have contributed to the proposal writing and budget preparation. TIDE also held preparatory meetings with all 5 of the local communities who will be directly involved in this project to enable them to express both their interest and concerns with the project. This has enabled us to adapt elements of the project to suit local needs (e.g. choice of NTFPs to harvest was suggested by communities).

All UoE and IIED staff working on the project have been trained to follow the UK Research Integrity Office Code of Practice for Research (2009) (<http://www.ed.ac.uk/schools->

[departments/humanities-soc-sci/research-ke/support-for-staff/college-research/ethics-framework](#)). For example, the project officer conducting livelihoods surveys will be guided to pay particular regard to respect the rights, privacy, and safety of the community members being surveyed, using Prior Informed Consent (PIC) principles.

Our partner TIDE will be supported by IIED to ensure that all negotiations between them and local communities, and between communities and FD are inclusive, represent a range of views and opinions within each community and are transparently documented and reported.

For example, terms for sustainable harvesting and granting of community concessions will be drawn up with support from FD to ensure legal compliance and where no legal measures apply, by following access and benefit sharing best practice as described in <http://www.cbd.int/abs/instruments/default.shtml>

UoE recognises its health and safety responsibilities and has a clear health and safety policy for all staff working full and part time on a project, regardless of their nationality, <http://www.docs.csg.ed.ac.uk/Safety/Policy/Part8.pdf>

Before the project can commence, it must also pass a rigorous ethical assessment according to university procedures (<http://www.ed.ac.uk/schools-departments/geosciences/research/ethics>)

18. Legacy 300

Please describe what you expect will change as a result of this project with regards to biodiversity conservation/sustainable use and poverty alleviation (for DFID funded projects). For example, what will be the long term benefits (particularly for biodiversity and poor people) of the project in the host country or region and have you identified any potential problems to achieving these benefits?

Effective fire management will allow the natural stand structure of Caribbean pine to regenerate and savanna plant and animal biodiversity and woodland resources to recover. Yellow-headed parrots (*Amazona oratrix*, EN) will benefit from increased availability of nesting sites in pine trees and snags, a lack of which currently constrains breeding success. Fire control will assist recovery / regeneration of many endangered species including the cycad palm *Zamia prasina* (CR) which occurs locally but is thought to have fewer than 100 individuals in the wild. Other species expected to benefit from fire management include the fiddlewood tree (*Vitex gaumeri*, EN), Baird's tapir (*Tapirus bairdii*, EN), jaguar (*Panthera onca*, NT), puma (*Puma concolor*, NT) and palmita cycad (*Zamia polymorpha*, NT).

As a result of the project, we anticipate ~50 members of 5 communities living in lowland pine savanna in Toledo (~50% females) to each derive an annual income of £1,000-1,300 from sustainable extraction of palmetto palm. Three further SFEs will have business plans developed and be at various stages of market testing. An increased community capacity for fire management will safeguard the natural capital on which these enterprises will be based and reduce risks to crops, property and life.

TIDE is expected to benefit from offset costs (~5% of PCNP annual budget), as communities take over fire management operations, contributing to its financial security. Project results will inform a government decision regarding possible change to the NPAS Act to facilitate properly managed sustainable extraction from zones within national parks.

The project will establish national training courses in savanna biodiversity, resource monitoring and agricultural fire management, which will continue to be delivered to hundreds of further personnel and community members after the project through the NTPPAM. It will also create a significantly improved capacity among local organisations to develop community SFEs.

19. Pathway to poverty alleviation 300

Please describe how your project will benefit poor people living in low-income countries. All projects funded through DFID in Round 21 must be compliant with the OECD Overseas Development Assistance criteria. Projects are therefore required to indicate how they will have a positive impact on poverty alleviation in low-income countries.

Toledo is by far the poorest district in Belize, with 60% indigence in the rural population (Country Poverty Assessment Belize, 2009). In the target communities of Bella Vista, Bladen and Trio, most people earn very low wages through unskilled labour, and living conditions are among the worst in Belize (UNICEF Situation Analysis, 2011). Economic opportunities for females are much more limited than for males (Belize Country Program Doc/2013-2016).

One community forest enterprise we will develop is the harvesting of palmetto palm seeds; this can earn community members £12-15 /day for 14 weeks a year. This compares very favourably with wages of banana plantation workers (£8.33 /day), and equates to £1,000-1,300 pppa. Harvest of palmetto is typically a family activity with equal participation of males and females. Presently, the palmetto resource is threatened by unsustainable harvesting practices and wildfire. This project will ensure sustainable supply. The project will plan 3 further businesses, with potential for creating ~60 jobs in locally owned businesses.

Under the project, TIDE will create a plan for sustainable extraction from an ~7,000-acre zone in PCNP. If it can be demonstrated that the ecological impacts are within limits of acceptable change, the PA Administrator would most likely approve the plan, enabling ~50 additional community members to extract palmetto palm, providing £49,000-63,000 pa to community members and ≥£8,000 pa in royalties to FD. Additional resources, such as pine lumber, could be harvested within 5-10 years. FD will use this project to inform a possible revision of the National Parks System Act to facilitate community access to resources within national parks. This would benefit >100 communities around Belize's 17 national parks.

Poor communities will also receive non-monetary benefits, as recommended in Belize's National Poverty Elimination Strategy, including:

- Greater empowerment to manage natural resource assets
- Enhanced participation in governance
- Greater awareness of the law

19a. Impact to beneficiaries

If applying to DFID funding, please indicate the number of beneficiaries who are expected to be impacted by your project. If possible, indicate the number of women who will be impacted.

Approximately 30-40 families (170-230 people) are currently benefitting from extraction of palmetto seed from Toledo's pine savannas. However, this is jeopardised by unsustainable harvesting practices (felling the trees to obtain the seed) and wildfire. The project will safeguard this source of income for the future by empowering and incentivising communities to regulate extraction and participate in fire management (by EoP). 85-115 women stand to benefit by EoP.

A reduction in the frequency and severity of wildfires resulting from the project will safeguard additional savanna resources, most notably Caribbean pine, but also wild craboo (*Byrsonima crassifolia*), medicinal plants, games species, and numerous bird species valuable for tourism. These resources already support commercial pine logging in forest reserves, employing ~20 people full-time, and will form the basis of ≥1 additional SFE established as a result of the project (developed beyond EoP), feasibly benefitting another 20-100 people.

Opening a 7,000 acre zone in PCNP for sustainable extraction (probably after EoP) would enable a further 50 community members (≥50% women) to benefit from palmetto, and additional people to benefit from pine forestry and/or other SFEs within 5-10 years.

Wildfire reduction will also reduce unquantified economic and health impacts affecting >7,000 residents (47% females) in the 5 target communities. Enhanced national capacity to deliver

training in fire best practices will reduce such damages from wildfire nationwide (beyond EoP).

20. Exit strategy 200

State whether or not the project will reach a stable and sustainable end point. If the project is not discrete, but is part of a progressive approach, give details of the exit strategy and show how relevant activities will be continued to secure the benefits from the project. Where individuals receive advanced training, for example, what will happen should that individual leave?

The project forms part of TIDE's long-term strategy to protect pine woodlands by promoting stewardship and sustainable use by local communities. Within 3 years, we seek to have built capacity for community wildfire management in Toledo District and provided incentives for communities to engage in wildfire management by creating a first generation of SFEs. The project will have reached a sustainable end point if:

- 1 TIDE has capacity to continue the biodiversity monitoring, has a plan for sustainable extraction from PCNP, has closer relations with PCNP buffer communities, and can develop proposals for new community SFEs.
- 2 Local communities can undertake wildfire management and conduct further training for themselves. Communities have greater access to woodland resources and more secure household incomes, which are likely to sustain or increase as further SFEs are established.
- 3 ERI has incorporated project outputs into the NTPPAM and will continue to run training courses in biodiversity monitoring and fire management, and has disseminated project outputs supporting the National Biodiversity Monitoring Strategy.
- 4 FD can use project outputs to demonstrate to government how PAs can achieve biodiversity conservation and allow communities to share benefits, and has enhanced capacity to implement the National Wildland Fire Management Strategy.

21. Raising awareness of the potential worth of biodiversity 300 words

If your project contains an element of communications, knowledge sharing and/or dissemination please provide a description of your intended audience, how you intend to engage them, what the expected products/materials there will be and what you expect to achieve as a result. For example, are you expecting to directly influence policy in your host country or is your project a community advocacy project to support better management of biodiversity?

Raising awareness of the value of pine savannas is an important aspect of the project. By demonstrating the economic value of this ecosystem and benefits to community members, we seek to reduce public and political pressure to de-reserve forest reserves in order to convert this endangered ecosystem to agriculture.

The target audiences are: i) the communities buffering PCNP; ii) the present (and prospective) Government of Belize (Cabinet); iii) the general public.

A 2014 survey by TIDE of 100 households in the PCNP buffer communities revealed that 70% of respondents used radio as their primary source of information and that 70% of those listened to one radio station, Love FM. The second most popular information source was the national newspaper The Amandala. TIDE is aware that members of Cabinet listen to Love FM and read The Amandala because some of them frequently call in or write letters to the editor.

This project will enable TIDE to publish 2 articles in The Amandala and to air one 15-min Love FM segment to promote the value in conserving pine savannas, highlighting the fact that community members are benefitting from sustainable extraction of NTFP in forest

reserves and taking active responsibility for stewarding the ecosystem.

Belizean staff who are well versed in Belizean culture and values will produce the radio show and edit the articles, increasing their popularity and acceptance by local people. Additional funds (described in 15c) will be sought from another sponsor for a more extensive public awareness campaign that will run during the project to educate the public how to assess the danger of fire and promote a culture where it is less acceptable for people to start fires without specific training or permission to do so safely.

IIED will disseminate project findings through its international Poverty and Conservation Learning Group.

22. Access to project information 250

Please describe the project's open access plan and detail any specific costs you are seeking from Darwin to fund this.

ERI and FD are public bodies and the information they hold will be freely available during and beyond the project. The results of biodiversity monitoring will be deposited annually into the ERI National Biodiversity Monitoring Database, which will enable changes in biodiversity in the pine savannas of southern Belize to be compared against trends in other savanna areas in Belize. This information will subsequently be assembled into Belize's state of environment reporting, which ERI presently conducts for FD.

All the training materials produced by the project will be delivered to ERI, where they will be incorporated into the National Training Programme for PA Management (NTTPAM). This will enable the materials to be shared with the wider community of PA organisations throughout the country, and beyond, through the international researcher network connections of the ERI.

Information gained through the project on biodiversity monitoring, best practices for community fire management and development of SFEs will be shared in country by opening the training workshops (activities 1.8, 2.4 and 3.7) to conservation NGOs / CBOs across Belize, whilst the materials produced will be freely available from TIDE and the ERI, and further disseminated through the NTTPAM.

Research publications arising will be published in Open Access journals and funding for this is factored into the lead organisation's overall budget. Articles will also be made available for download through the ERI publication repository.

23. Importance of subject focus for this project 250

If your project is working on an area of biodiversity or biodiversity-development linkages that has had limited attention (both in the Darwin Initiative portfolio and in conservation in general) please give details.

Despite savannas covering more than 10% of the earth's surface, the biodiversity and threats to this ecosystem are understudied globally. For example, the most recent evaluation of closed Darwin projects found far fewer DI projects have been carried out in savannas than in forest or marine ecosystems. This is concerning considering that savannas are one of the most populated of all ecosystems, and yet many people living in savannas have the lowest incomes and poorest livelihoods. There is growing evidence that poverty is a key driver behind the degradation of biodiversity in many savanna areas. For these reasons, it is important to study savannas when seeking to understand the links between poverty and biodiversity.

Savannas are also a valuable source of evidence in understanding the links between biodiversity conservation and adaptation to climate change, which this project addresses through the approach of increasing socio-ecological resilience through community fire management.

Although the specific subtype of tropical lowland pine woodland being studied here is recognised as a particularly rare and unusual subtype by WWF, the general principles of

creating positive incentives to conserve woodlands by establishing community fire management could be transferred to community fire management projects in other similar pine woodlands. We believe that many of the conservation-development linkages we are exploring here are relevant to other low income countries with extensive savanna areas (e.g. Guyana, Honduras, Mexico, Nicaragua).

24. Leverage

a) Secured

Provide details of all funding successfully levered (and identified in the Budget) towards the costs of the project, including any income from other public bodies, private sponsorship, donations, trusts, fees or trading activity.

Confirmed:

The project has matched funding of £185k, or 38% of project costs, all of which is secured. This includes £XXXk committed by UoE for the costs of providing staff time for project leadership, supervision of the project officer, project management, M&E, financial control and project reporting activities throughout the 3 years of the project. The overseas partners are also making significant in-kind contributions to the project of £XXXk, including staff time dedicated to the project without charge by several staff from TIDE, FD and the Everglades National Park and including £17k of direct assistance towards costs of the fieldwork and educational and training components.

b) Unsecured

Provide details of any matched funding where an application has been submitted, or that you intend applying for during the course of the project. This could include matched funding from the private sector, charitable organisations or other public sector schemes.

Date applied	Donor organisation	Amount	Comments
03.17.13	Japan Social Development Fund through the Belize Enterprise for Sustainable Technology	£73,000	To establish three fruit-drying enterprises, employing 10 women each, including one in a PCNP buffer community. This separate project is in a different ecosystem and is focused purely on livelihood development. This project will however benefit from the expertise which TIDE will gain from this DI project in developing a business plan, market testing etc.
Planned	To be confirmed (TBC)	TBC	TIDE will seek additional finance to allow the full start-up of at least 1 of the SFEs for which a business plan, market analysis and pilot production have been tested through this project.
Planned	To be confirmed (TBC)	£6,000	To conduct a <u>national</u> population assessment of yellow-headed parrots (i.e. beyond the geographical scope of this project) using the skills acquired.
Planned	Forest Department and/or NGO PA co-managers	TBC	Future income to TIDE resulting from the marketing undertaken in this project promoting TIDE as a provider of fire management consultancy.

PROJECT MONITORING AND EVALUATION**MEASURING IMPACT****25. LOGICAL FRAMEWORK**

Darwin projects will be required to report against their progress towards their expected outputs and outcomes if funded. This section sets out the expected outputs and outcomes of your project, how you expect to measure progress against these and how we can verify this.

The information provided here will be transposed into a logframe should your project be successful in gaining funding from the Darwin Initiative. The use of the logframe is sometimes described in terms of the Logical Framework Approach, which is about applying clear, logical thought when seeking to tackle the complex and ever-changing challenges of poverty and need. In other words, it is about sensible planning.

Impact

The Impact is not intended to be achieved solely by the project. This is a higher-level situation that the project will contribute towards achieving. All Darwin projects are expected to contribute to poverty alleviation and sustainable use of biodiversity and its products.

Biodiversity of pine woodlands is conserved throughout Belize, enabled by an increased national capacity for community-based wildfire control that is founded upon a just and sustainable use of these woodlands.

Outcome

There can only be one Outcome for the project. The Outcome should identify what will change, and who will benefit. The Outcome should refer to how the project will contribute to reducing poverty and contribute to the sustainable use/conservation of biodiversity and its products. This should be a summary statement derived from the answer given to question 14.

Biodiversity of pine woodlands in southern Belize is conserved by developing community-based wildfire management, with local communities incentivised to participate through a more just and sustainable use of woodland resources.

Measuring outcomes - indicators

Provide detail of **what you will measure** to assess your progress towards achieving this outcome. You should also be able to state **what the change you expect** to achieve as a result of this project i.e. the difference between the existing state and the expected end state. You may require multiple indicators to measure the outcome – if you have more than 3 indicators please just insert a row(s).

Indicator 1: Biodiversity is monitored and conserved	Numbers of endangered, threatened and indicator species in the pine woodlands of Toledo District should show no further reduction compared to baseline surveys conducted at start of project, while numbers of specific species are expected to increase by up to 20% by the end of project (EoP), following introduction of wildfire control measures. The long-term sustainability of monitoring capacity will also be measured as the number of people trained in biodiversity monitoring by EoP and the amount of training material made available for use locally beyond EoP.
Indicator 2: Wildfire is reduced by participation of ≥100 community	Application of enhanced capacity in fire management will be measured as: a) the number of community members participating in fire management with the Southern Belize Fire Working Group (an increase from zero to ≥50); b) the number of farmers in the target communities applying best practices in use of agricultural fire (an increase of ≥50 from ~45 at present).

members in wildfire management	The number, extent and severity of uncontrolled burns per year will be estimated by remote sensing and from field reporting, and compared to pre-project baselines where these data exist or can be estimated.
Indicator 3: Woodland resources are used sustainably	<p>Sustainable use of woodland resources will be indicated by the area of woodland under community NTFP concessions and the quantity of NTFP harvested. By EoP, this is anticipated to increase from zero to 4,200 acres, yielding an estimated 420,000 lb of palmetto seed per year.</p> <p>Sustainability of extraction rates will be determined by quantifying palmetto palm at start and end of project, and should demonstrate no reduction or an increase. Beyond EoP, TIDE and FD will continue to use a protocol developed under the project to quantify palmetto and verify continued sustainable use.</p> <p>A baseline inventory of Caribbean pine in PCNP will have been carried out. By EoP, monitored growth and regeneration rates will be used to produce projections for sustainable extraction rates over a 10 year horizon. These results will feed into a plan for a sustainable extraction zone in PCNP, which will include an evaluation of the ecological and socio-economic impacts. This will be presented to the Protected Areas Administrator and Minister of Forestry Fisheries and Sustainable Development to inform decisions regarding approval of the sustainable extraction zone in PCNP, and possible strengthening of the National Parks System Act.</p> <p>Protocols and training materials for monitoring Caribbean pine and NTFP will have been developed and incorporated into the NTPPAM.</p>
Indicator 4: Local communities obtain livelihood benefits.	<p>Long-term sustaining incomes to villagers will be measured by the following indicators: i) the number of community concessions granted for NTFP harvesting (target: 20 licenses by EoP from zero at present); ii) the number of community members employed (target: 50, including ≥25 women by EoP from zero at present); iii) income to community members from concessions (target: £49,000-63,000 per annum. At present, community members are receiving this income without concessions but harvest techniques and wildfire are reducing the availability of the resource. The project will secure this income).</p> <p>Non-monetary poverty-alleviation benefits, including participation in decision-making about woodland resources, will also be measured.</p> <p>We will monitor the number of staff in partner organisations and other NGOs that have received training to develop business plans and conduct market screening to develop SFEs (base: 0, target: 20) by EoP to indicate that a local capacity to continue this development work has been created.</p>

Verifying outcomes

Identify the source material the Darwin Initiative (and you) can use to verify the indicators provided. These are generally recorded details such as publications, surveys, project notes, reports, tapes, videos etc.

Verifying Indicator 1: Biodiversity conserved	Results of plant and animal monitoring surveys in PCNP, Deep River Forest Reserve and Swasey-Bladen Forest Reserve, using protocols developed under the project, will be aggregated and reported annually in documents such as the PCNP annual report to FD. Datasets will be collated by ERI as part of its national biodiversity monitoring and reporting programme. Evidence of numbers of people trained will be verified through completed examination scripts and task books. Biodiversity training materials will be supplied as pdfs for inspection.
Verifying Indicator 2:	Mario Muschamp, in-country lead, chairs the SBFWG and will verify trainee's participation in fire management with the SBFWG. TIDE will contact

<p>Wildfire is reduced community participation in wildfire management</p>	<p>recipients of training in safe use of agricultural fire, whose names and contact details will be recorded in a database, to verify whether or not they are using the training provided. A sub-set of participants' farms will be visited for further verification.</p> <p>The project officer will carry out a GIS analysis of wildfire in Toledo's pine savannas to estimate the impact of project interventions on wildfire frequency and severity during the project. The full impacts will occur after EoP, and will be measured by future remote sensing studies of fire and land use change that will be carried out by UoE, following methods developed for Belize by themselves and workers such as Cherrington (2010) and Meerman (2011).</p> <p>Cherrington (2010) Fire trends for Belize (2003-2009): data from satellite-based monitoring. CATHALAC. Meerman, JC (2011) Provisional report on the Belize 2011 wildfires. Aftermath of Hurricane Richard.</p>
<p>Verifying Indicator 3: Pine woodland resources used sustainably</p>	<p>Concession licenses and maps will be available to verify NTFP concessions. Concessionaires will submit records of yields to TIDE and FD, who will store the information in a database available for verification.</p> <p>A report on the results of palmetto palm inventorying at start and end of project will be available to verify that harvest rates are sustainable.</p> <p>Results of the pine stock assessment and plan for a sustainable extraction zone in PCNP will be written up in reports and supplied for inspection, as will written protocols and training materials for forest inventorying.</p>
<p>Verifying Indicator 4: Local communities obtain livelihood benefits</p>	<p>Results of baseline and EoP household income and livelihood surveys in the 5 communities will be written up and supplied as a report.</p> <p>A report will summarise results of meetings between FD, TIDE, local communities and commercial logging concessionaires agreeing terms and conditions by which local communities may access and use pine woodland resources (including NTFP) in forest reserves and, in future, national parks.</p> <p>Sales records of NTFP concessionaires and concession licenses listing beneficiaries will verify community economic benefits. FD records of palmetto palm exports will provide further verification.</p> <p>Notes from meetings of a NTFP concessionaires committee will be reported to FD, commercial logging concessionaires and the PCNP Advisory Council, and will provide verification of participation in decision-making.</p> <p>Notes from community consultations on proposals for SFEs and the business plans for three SFE will be available for inspection.</p>

Outcome risks and important assumptions

You will need to define the important assumptions, which are critical to the realisation of the *outcome and impact* of the project. It is important at this stage to ensure that these assumptions can be monitored since if these assumptions change, it may prevent you from achieving your expected outcome. If there are more than 3 assumptions please insert a row(s).

<p>Assumption 1</p>	<p>The Government of Belize remains a committed signatory of the CBD and the Forest Department continues to engage with this project as means of obtaining evidence to support moves towards promoting access and benefit sharing within its forest reserves and national parks, moving the government towards ratifying the Nagoya protocol. This will be monitored through the level of input by FD to project activities, their level of engagement with stakeholder meetings and their attendance and contribution to project partner meetings. This risk has been reduced by involving FD as a co-implementing partner since the inception of the project, so that many FD staff are already aware and supportive of the project ideas, having been involved in shaping them. We will encourage their continued support by actively engaging with a wide range of FD personnel from the Chief Forest Officer down to forest officers,</p>
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	by co-working with them on the resource inventory fieldwork, by involving them in meetings and training events, and by covering their travel costs.
Assumption 2	<p>Project partners and stakeholders continue to co-operate effectively. This risk is reduced because TIDE already has good working relationships with the 5 communities to be involved and their community leaders were consulted and agreed to the idea of participating in fire management and small forest business development as part of the scoping for this project.</p> <p>We will monitor the level of engagement by the 5 communities in the project; if we find reduced engagement by particular villages, groups or gender, we will respond by pro-actively seeking further engagement, e.g. by modifying the nature / timing of outreach or training. Stakeholders, including logging concessionaires, local communities and the wider NGO network, will be engaged through regular meetings throughout the project. Partners will be able to review and comment on project management and adjust activities, including frequency, location and timing of meetings, possible additional stakeholders or partners and methods of communication, to facilitate co-operation.</p>
Assumption 3	<p>Natural disasters, such as hurricanes or wildfires do not seriously damage the woodland areas in Payne's Creek National Park, Swasey-Bladen Forest Reserve and Deep River Forest Reserve, which are the focus areas for this project. Southern Belize is in a relatively low risk hurricane risk belt compared with most of the Caribbean. The risk over the 3 years of the project is low. The project itself responds to the risk of intense wildfires by establishing community fire management. As the project progresses, it will reduce the risk of wildfire and build community resilience. By distributing the fire management and community concessions geographically in different savanna areas, the risk that all sites would be affected by a natural disaster is minimised.</p>
Assumption 4	<p>There continues to be sufficient demand for palmetto palm seed. This assumption is likely to be valid since there has been a reliable market for 16 years. Mr. Paul Bradley from Burrell Boom, Belize District has been exporting to Canada since 1998. In 2014, he exported 350,000 lb dry seed (583,000 lb wet) and says his buyer would have taken another 50% had it been available. He has expressed that his main problem is harvesters cutting down the trees to obtain the seed. He is very supportive of the plans proposed in this project to train and equip community members to harvest sustainably.</p>

Outputs

Outputs are the specific, direct deliverables of the project. These will provide the conditions necessary to achieve the Outcome. The logic of the chain from Output to Outcome therefore needs to be clear. If you have more than 3 outputs insert a row(s). It is advised to have less than 6 outputs since this level of detail can be provided at the activity level.

Output 1:	Biodiversity and woodland resource baselines are established for pine savanna woodlands within Toledo District and monitored during the project to provide evidence that biodiversity is being conserved and in some cases may have been enhanced during the project period.
Output 2:	Training to enhance national capacity to a) monitor savanna biodiversity / resources; b) provide training in best practices for agricultural fire use; c) develop small forest enterprises.
Output 3	≥100 community members are trained in fire management (≥50 NTFP concession-holders trained in fire management for pine savannas and ≥50 farmers trained in best practices in use of agricultural fire).

Output 4:	Community NTFP concessions involving ≥ 50 community members are established and yielding $\sim 420,000$ lb palmetto seed per annum (generating £49,000-63,000 per annum for community members and £8,400 per annum in royalties for FD).
Output 5:	A plan for a sustainable extraction zone in PCNP that includes an evaluation of the ecological and socio-economic impacts.
Output 6:	Business plans created for ≥ 3 additional SFEs suitable for PCNP buffer communities.

Measuring outputs

Provide detail of what you will measure to assess your progress towards achieving these outputs. You should also be able to state what the change you expect to achieve as a result of this project i.e. the difference between the existing state and the expected end state. You may require multiple indicators to measure each output – if you have more than 3 indicators please just insert a row(s).

Output 1 – Biodiversity and woodland resource baselines.	
Indicator 1	<p>Measures of abundance, diversity, distribution and/or condition of animals (<i>A. oratrix</i> and bird indicator species) and plants (<i>P. caribaea</i>, <i>Z. prasina</i>, <i>V. gaumeri</i>, <i>A. wrightii</i>) in PCNP, DRFR and SBFR will be recorded using protocols developed under the project (e.g. roost counts, transect surveys, point surveys, vegetation plots, etc.) for Belize nationally by the ERI and TIDE based on international indicators suggested by UNEP/WCMC, Panthera and WWF.</p> <p>Availability of baseline data for PCNP will have increased from one of these monitoring targets (birds) at present to six by end of project (EoP). Revision of the bird monitoring protocol is required to coordinate with other PA. Baseline data for DRFR and SBFR will have increased from one of these monitoring targets (Caribbean pine) to two (pine and palmetto).</p>

Output 2 – Training to enhance national capacity to a) monitor savanna biodiversity / resources, b) provide training in best practices for agricultural fire use, c) develop SFEs.	
Indicator 2	<p>The number of people in Belize capable of monitoring all of the species under output 1 will have increased by ~ 30 from <10 at present.</p> <p>The number of people in Belize capable of providing training in safe use of agricultural fire will have increased by ≥ 15 from <5 currently.</p> <p>The number of NGO personnel competent to develop SFEs will have increased by ~ 20 from an estimated <10 at present.</p>

Output 3 – ≥ 100 community members are trained in fire management.	
Indicator 3	The number of community members trained in: a) fire management for pine savannas; and, b) best practices in use of agricultural fire, will have increased by ≥ 50 each from baselines of 10 and 45, respectively.
Output 4 – Community NTFP concessions involving ≥ 50 community members are established and yielding $\sim 420,000$ lb palmetto seed per annum (generating £49,000-63,000 per annum for community members and £8,400 per annum for FD).	
Indicator 4	The number of NTFP concessions will have increased from zero to ~ 20 and the number of community members harvesting NTFP from these concessions will have increased from zero to ≥ 50 ($\geq 50\%$ females).

Indicator 5	The number of people in the target communities participating in decision-making about woodland resources in PCNP, Deep River Forest Reserve and Swasey-Bladen Forest Reserve will have increased by ≥ 20 from 8 (six PCNP Advisory Council members and two commercial logging concessionaires). Female participation will have increased from 10% at present to $\geq 20\%$.
Indicator 6	The yield, sales volume and sales price of palmetto seed will be determined by the concessionaires themselves, who will record these data and submit them to TIDE and FD. Yield is projected to be 420,000 lb wet seed per annum (the amount that 50 people would typically harvest in a season, requiring approximately 4,200 acres). FD will record the volume of dry seed exported (FD collects a royalty of 0.10 BZD per dry pound).

Output 5 – A plan for a sustainable extraction zone in PCNP that includes an evaluation of the ecological and socio-economic impacts.

Indicator 7	The plan will be judged to have been a success if it provides adequate information on which to: a) base sustainable extraction rates; b) cost the implementation of the plan; c) evaluate the monetary and non-monetary benefits; d) evaluate the ecological impacts and plan mitigation measures. No similar study is available at present.
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Output 6 – Business plans created for ≥ 3 additional SFEs suitable for PCNP buffer communities.

Indicator 8	The number of business plans for SFE making use of savanna resources will have increased from none to ≥ 3 . The plans will be judged to be successful if they provide sufficient information for an investor to decide whether or not to invest.
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Verifying outputs

Identify the source material the Darwin Initiative (and you) can use to verify the indicators provided. These are generally recorded details such as publications, surveys, project notes, reports, tapes, videos etc.

Indicator 1	Biodiversity baselines for PCNP, DRFR and SBFR will be verified by biodiversity monitoring reports and raw data.
Indicator 2	The number of people with the competencies described will be verified by completed exam scripts (theoretical) and task books (practical components).
Indicator 3	The number of people trained in fire management will be verified by completed task books and records of course attendance.
Indicator 4	The number of concession-holders will be verified by concession licenses and a database of concession-holders.
Indicator 5	Participation of stakeholders in decision-making regarding natural resource management in PCNP, DRFR and SBFR will be verified by minutes of the PCNP Advisory Council and a NTFP concessionaire's committee that will be established under the project.
Indicator 6	Yield, sales volume and price of NTFP from concessions will be verified by data sheets submitted by concessionaires and a database of the information.
Indicator 7	The sustainable extraction zone plan document will provide verification.
Indicator 8	The business plan documents will provide verification.

Output risks and important assumptions

You will need to define the important assumptions, which are critical to the realisation of the achievement of your outputs. It is important at this stage to ensure that these assumptions can be monitored since if these assumptions change, it may prevent you from achieving your expected outcome. If there are more than 3 assumptions please insert a row(s).

Assumption 1	Personnel with required expertise for biodiversity / resource monitoring, and design / provision of training courses remain committed to the project. The assumption is likely to be valid since individuals with the required expertise have already been identified and consulted.
Assumption 2	NTPPAM and the National Ranger Training Academy continue as long-lasting initiatives. This is realistic as the intention is for them to become self-sustaining in the long term, financed by trainee fees. A business plan has found this to be viable. Belize' Protected Areas Conservation Trust has indicated an intention to fund additional capital costs for these programs on an on-going basis.
Assumption 3	Community members remain interested in training in fire management. A pilot training session on agricultural fire best practices in 2014 was very well received – farmers were glad to learn they can achieve their burn objectives (to mineralize the maximum proportion of biomass in the plot) safely without significant extra effort. Completion of training in fire management will be a condition of granting the NTFP concessions.
Assumption 4	Palmetto palm resources are not destroyed by hurricane or major wildfire. Wildfire monitoring is built into the project.
Assumption 5	The market for palmetto palm seed remains viable. This will be monitored through the project and information used to determine a viable number of licenses to grant each year.
Assumption 6	Community members remain interested in NTFP concessions and SFES. This assumption will be monitored through the project using feedback from stakeholder meetings and the results of the reflective learning M&E by the communities.
Assumption 7	Agriculture Dept. and other partners remain open to discussing possible changes to governance of rural fire use. Engagement with the Agriculture Department is planned throughout the project, and their level of engagement will be monitored and reported at partner meetings.
Assumption 8	FD remains willing to grant licenses for NTFP extraction from forest reserves. This will be reinforced if Belize ratifies the Nagoya Protocol, as is anticipated over the next 5-10 years once sufficient evidence has been assembled for the government from sources such as this project.

Activities

Define the tasks to be undertaken by the research team to produce the outputs. Activities should be designed in a way that their completion should be sufficient and indicators should not be necessary. Risks and assumptions should also be taken into account during project design.

Output 1 – Biodiversity and woodland resource baselines.	
Activity 1.1	Surveys of pine stocks in PCNP (TIDE, FD)
Activity 1.2	Establish 28 0.2 ha permanent plots in PCNP (TIDE, FD)
Activity 1.3	Assess distribution, abundance and productivity of palmetto palm in PCNP, DRFR and SBFR (TIDE, FD)
Activity 1.4	Develop protocols for monitoring Caribbean pine and palmetto palm (TIDE)
Activity 1.5	Establish/refine protocols for monitoring key conservation targets (yellow headed parrot, the cycad palm <i>Zamia prasina</i> , and the fiddlewood tree) and biodiversity indicator species (birds) in line with the National Biodiversity Monitoring Program (TIDE, ERI)
Activity 1.6	Establish biodiversity and wildfire baselines against which effects of fire control and sustainable harvesting will be monitored (TIDE)

Output 2 – Training to enhance national capacity to a) monitor savanna biodiversity / resources, b) provide training in best practices for agricultural fire use, c) develop SFEs.	
Activity 1.7	Develop materials for monitoring pine woodland biodiversity and resources for the NTPPAM (ERI, TIDE)
Activity 1.8	Conduct national training workshops in biodiversity monitoring for ~30 PA staff (ERI)
Activity 2.4	Train ≥15 PA personnel and community leaders to deliver further training as provided in 2.3 beyond EoP (TIDE, Everglades)
Activity 3.7	Train ~20 staff from TIDE and other NGO co-managers in SFE development (IIED)

Output 3 – ≥100 community members are trained in fire management.	
Activity 2.1	Community consultation on wildfire management (TIDE, FD)
Activity 2.2	Produce materials to train community members in fire management and disseminate via NTPPAM (TIDE, Everglades)
Activity 2.3	Train ≥50 farmers and community leaders in fire management (TIDE, Everglades)
Activity 2.5	Train and equip ≥50 community members to harvest palmetto seed sustainably, and manage wildfire (TIDE)
Activity 2.8	Convene meetings between TIDE, FD, Agriculture Dept., NAVCO and DAVCO to agree improvements to governance of rural fire use (TIDE, FD)

Output 4 – Community NTFP concessions involving ≥50 community members are established and yielding ~420,000 lb palmetto seed per annum (generating £49,000-63,000 per annum for community members and £8,400 per annum for FD).	
Activity 3.3	Formalise license agreements with FD whereby community members are granted concessions to harvest NTFPs within forest reserves (TIDE, FD)
Activity 2.5	Train and equip ≥50 community members to harvest palmetto seed sustainably, and manage wildfire (TIDE)
Activity 3.4	Establish and monitor NTFP concessions involving ≥50 community members. Establish a concessionaires committee (TIDE, FD)

Output 5 – A plan for a sustainable extraction zone in PCNP that includes an evaluation of the ecological and socio-economic impacts.	
Activity 2.6	Assess the economic costs of fire management and incomes from sustainable extraction of woodland resources (TIDE)
Activity 2.7	Create a plan for a sustainable extraction zone in PCNP, including evaluation of the ecological and socio-economic costs and benefits (TIDE)

Output 6 – Business plans created for ≥3 additional SFEs suitable for PCNP buffer communities.	
Activity 3.1	Undertake baseline and EoP surveys of livelihoods in five communities (IIED, TIDE)
Activity 3.2	Formalise license agreement(s) with FD terms for community-run SFE to sustainably use woodland resources (TIDE, FD)
Activity 3.5	Meetings with community groups to assess interest in developing SFEs (IIED, TIDE)
Activity 3.6	Develop business plans for three SFEs (IIED)

26. Provide a project implementation timetable that shows the key milestones in project activities. Complete the following table as appropriate to describe the intended workplan for your project.

Activity		No of Months	Year 1				Year 2				Year 3			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Monitoring and reporting														
0.1 Steering group meetings to monitor progress (inc preparation and reporting)		1	*		*		*		*		*		*	
0.2 Half yearly and annual reporting to steering committee		1			*		*		*				*	
0.3 Publicise project results via newspaper, radio, and journal publications		1									*	*	*	
Output 1	Biodiversity and woodland resource baselines.													
1.1	Surveys of pine stocks in PCNP (TIDE, FD)	5	*			*	*							
1.2	Establish 28 0.2 ha permanent plots in PCNP (TIDE, FD)	4				*	*							
1.3	Assess distribution, abundance and productivity of palmetto palm in PCNP, DRFR and SBFR (TIDE, FD)	4				*	*		*	*				
1.4	Develop protocols for monitoring Caribbean pine and palmetto (TIDE)	1	*											
1.5	Establish / refine protocols for monitoring <i>A. oratrix</i> , <i>Z. prasina</i> , <i>V. gaumeri</i> and bird indicator spp. (TIDE, ERI)	1	*											
1.6	Establish biodiversity baselines (TIDE)	3		*	*	*								
Output 2	Training to enhance national capacity to a) monitor savanna biodiversity / resources, b) train community members in best practices for agric. Fire, c) develop small forest enterprises.													
1.7	Develop materials for monitoring pine woodland biodiversity and resources for the NTPPAM (ERI, TIDE)	3		*	*									
1.8	Conduct national training workshops for biodiversity monitoring (ERI)	1					*	*						
2.4	Train ≥15 PA personnel and community leaders to deliver the training provided in 2.3 (TIDE, Everglades)	1								*			*	
3.6	Train ~20 staff from TIDE and other NGO co-managers in SFE development (IIED)	1									*			
Output 3	≥100 community members are trained in fire management.													
2.1	Consultation meetings in communities (TIDE, FD)	1	*	*										

2.2	Produce training materials to train community members in fire management and disseminate via NTPPAM (TIDE, Everglades)	6		*	*									
2.3	Train ≥50 farmers and community leaders in fire management (TIDE, Everglades)	4					*			*	*			*
2.5	See output 4 below													
2.8	Convene meetings between TIDE, FD, Agriculture Dept., NAVCO and DAVCO to agree improvements to governance of rural fire use (TIDE, FD)	2	*		*		*		*		*		*	
Output 4	Community NTFP concessions involving ≥50 community members are established and yielding ~420,000 lb palmetto seed per annum (generating £49,000-63,000 per annum for community members and £8,400 per annum for FD).													
3.3	Formalise license agreements with FD whereby community members are granted concessions to harvest NTFP within forest reserves (TIDE, FD)	2			*	*	*	*						
2.5	Train and equip ≥50 community members to harvest palmetto seed sustainably and manage wildfire (TIDE)	4										*		
3.4	Establish NTFP concessions involving ≥50 community members (TIDE, FD)	5											*	*
Output 5	A plan for a sustainable extraction zone in PCNP that includes an evaluation of the ecological and socio-economic impacts													
2.6	Assess the economic costs of fire management and incomes from sustainable extraction of woodland resources (TIDE)	1						*						
2.7	Create a plan for a sustainable extraction zone in PCNP, including evaluation of the ecological and socio-economic costs and benefits (TIDE)	3									*	*		
Output 6	Business plans for ≥3 additional SFE suitable to PCNP buffer communities													
3.1	Undertake baseline and EoP surveys of livelihoods in five communities (IIED, TIDE)	4		*	*							*	*	
3.2	Agree with FD terms for community-run SFE to sustainably use woodland resources (IIED, TIDE, FD)	2			*	*	*	*						
3.5	Meetings with community groups to assess interest in developing SFEs (IIED, TIDE)	2			*	*								
3.6	Develop business plans for three SFEs (IIED)	8					*	*	*	*				

27. Project based monitoring and evaluation (M&E)

Describe, referring to the Indicators above, how the progress of the project will be monitored and evaluated, making reference to who is responsible for the projects M&E. Darwin Initiative projects are expected to be adaptive and you should detail how the monitoring and evaluation will feed into the delivery of the project including its management. M&E is expected to be built into the project and not an 'add' on. It is as important to measure for negative impacts as it is for positive impact.

(Max 500 words)

Project progress will be monitored and reviewed through project meetings that will be held at least biennially, comprising Dr Neil Stuart (project lead), Mario Muschamp (in-country lead, TIDE), Dr Elma Kay (ERI), Rasheeda Garcia (FD Liaison), Dr Duncan Macqueen (IIED) with further partner and stakeholder representatives co-opted as activities dictate. Additionally, we propose a monitoring and learning system, with feedback on the livelihoods development component of the project obtained through community stakeholder meetings held at least once a year. Overall financial monitoring will be provided by Edinburgh University Finance Office, with partners submitting quarterly accounts / invoices. The project co-implementing partners will each submit annual activity reports to the project lead who will edit and incorporate these into annual reporting to LTS.

Progress toward milestones and outputs to achieve the indicators will be monitored and evaluated through the Darwin Initiative's own reporting procedures as well as Edinburgh University's internal project assessment system. All the local partners will be involved in monitoring and evaluation of this project. Delivery of the outputs according to the workplan will be monitored and reported on biennially by the first organisation listed against each activity in the table of activities in table 26. Each partner meeting will allow partners to collectively review progress towards the overall outcome and check that the outcome as well as output level assumptions are still valid and to consider any changes or refinements of activities to ensure the outcome will be met by EoP.

Activities that depend on preceding activities will be monitored carefully to allow any slippage or unanticipated problems to be recognised and action taken as early as possible. E.g. delays in producing output 1 - resource baselines, e.g. abundance of palmetto (1.3) would lead to delays in dependent activities, such as the sustainable extraction zone plan (2.7) and the number of concessions that can be granted (3.4).

Adaptive management will be followed, and key decision points identified, so for example, the results of the community consultations in activity 3.5 will be used to select the particular businesses that are then shortlisted for development in activity 3.6.

The community consultation activities (2.1, 2.8 and 3.5) will also provide opportunities for communities to voice concerns about any terms and conditions, access arrangements or businesses that they feel may have possible negative impacts, or for example may lead to unequal access to income opportunities within or between communities. A participatory approach will be adopted, allowing the communities to be involved in proposing workable arrangements to mitigate any such problems. The reflective learning element of this project's M&E will be designed to enable us to evaluate the value and success of the project not only for the partners, but also in the opinion of the communities involved.

FUNDING AND BUDGET

Please complete the separate Excel spreadsheet which provides the Budget for this application. Some of the questions earlier and below refer to the information in this spreadsheet.

NB: Please state all costs by financial year (1 April to 31 March) and in GBP. **Budgets submitted in other currencies will not be accepted.** Use current prices – and include anticipated inflation, as appropriate, up to 3% per annum. The Darwin Initiative cannot agree any increase in grants once awarded.

28. Cost Effectiveness

Please explain how you worked out your budget and how you will provide value for money through managing a cost effective and efficient project. You should also discuss any significant assumptions you have made when working out your budget.

(max 300 words)

First, UoE obtained budgets for project activities from TIDE, ERI and IIED. Then, Duncan Moss, project finance officer, produced a consolidated budget, ensured no duplication of costs, and identified ways of running activities in parallel to ensure cost-effectiveness. An exchange rate of 1.6 USD/GBP was assumed (the Belize dollar is tied to the US dollar at 2 BZD / USD).

UoE then worked with partners to identify activities and costs that could be reduced without impacting the project outputs and outcome, and costs that we could fund through applications to other sponsors for activities that would enhance but are non-critical to the project outcome, making the project lean and efficient. Reductions were shared equitably and transparently. To maximise cost-effectiveness, overheads were reduced to a bare minimum; UoE is not requesting any overhead costs from the Darwin Initiative.

The same person who led the preparation of this budget (Duncan Moss) will also manage the project finances should the project be accepted. Mr. Moss controlled the finances for project 17022, which was commended for providing value for money and effective use of resources, and will provide his time as an in-kind contribution.

FCO NOTIFICATIONS

Please check the box if you think that there are sensitivities that the Foreign and Commonwealth Office will need to be aware of should they want to publicise the project's success in the Darwin competition in the host country.

Please indicate whether you have contacted your Foreign Ministry or the local embassy or High Commission (or equivalent) directly to discuss security issues (see Guidance Notes) and attach details of any advice you have received from them.

Yes (no written advice) **Yes, advice attached** **No**

CERTIFICATION

On behalf of the trustees/company* of
 (*delete as appropriate)

I apply for a grant of £ **298,998** in respect of **all expenditure** to be incurred during the lifetime of this project based on the activities and dates specified in the above application.

I certify that, to the best of our knowledge and belief, the statements made by us in this application are true and the information provided is correct. I am aware that this application form will form the basis of the project schedule should this application be successful.

(This form should be signed by an individual authorised by the applicant institution to submit applications and sign contracts on their behalf.)

- I enclose CVs for project principals and letters of support.
- Our most recent signed audited/independently verified accounts and annual report can be found at:
https://www.wiki.ed.ac.uk/download/attachments/68630228/Financial_Statements_2012-13_Accounts_Wikki_Version.pdf

Name (block capitals)	
Position in the organisation	

Signed

Date:

Stage 2 Application - Checklist for submission

	Check
Have you read the Guidance Notes ?	✓
Have you provided actual start and end dates for your project?	✓
Have you indicated whether you are applying for DFID or Defra funding. NB: you cannot apply for both	✓
Have you provided your budget based on UK government financial years i.e. 1 April – 31 March and in GBP?	✓
Have you checked that your budget is complete , correctly adds up and that you have included the correct final total on the top page of the application?	✓
Has your application been signed by a suitably authorised individual ? (clear electronic or scanned signatures are acceptable in the email)	✓
Have you included a 1 page CV for all the Principals identified at Question 7?	✓
Have you included a letter of support from the main partner(s) organisations identified at Question 10?	✓
Have you been in contact with the FCO in the project country/ies and have you included any evidence of this?	✓
Have you included a signed copy of the last 2 years annual report and accounts for the lead organisation? An electronic link to a website is acceptable.	✓
Have you checked the Darwin website immediately prior to submission to ensure there are no late updates?	✓

Once you have answered the questions above, please submit the application, not later than midnight GMT on Monday 1 December 2014 to Darwin-Applications@ltsi.co.uk using the application number (from your Stage 1 feedback letter) and the first few words of the project title **as the subject of your email**. If you are e-mailing supporting documentation separately please include in the subject line an indication of the number of e-mails you are sending (eg whether the e-mail is 1 of 2, 2 of 3 etc). You are not required to send a hard copy.

DATA PROTECTION ACT 1998: Applicants for grant funding must agree to any disclosure or exchange of information supplied on the application form (including the content of a declaration or undertaking) which the Department considers necessary for the administration, evaluation, monitoring and publicising of the Darwin Initiative. Application form data will also be held by contractors dealing with Darwin Initiative monitoring and evaluation. It is the responsibility of applicants to ensure that personal data can be supplied to the Department for the uses described in this paragraph. A completed application form will be taken as an agreement by the applicant and the grant/award recipient also to the following:- putting certain details (ie name, contact details and location of project work) on the Darwin Initiative and Defra websites (details relating to financial awards will not be put on the websites if requested in writing by the grant/award recipient); using personal data for the Darwin Initiative postal circulation list; and sending data to Foreign and Commonwealth Office posts outside the United Kingdom, including posts outside the European Economic Area. Confidential information relating to the project or its results and any personal data may be released on request, including under the Environmental Information Regulations, the code of Practice on Access to Government Information and the Freedom of Information Act 2000.